Claims

- 2 We claim:
- 3 1. A stabilized phenolic resole resin composition comprising a phenolic resin and an
- 4 effective stabilizing amount of an ortho ester.

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The stabilized phenolic resole resin composition of claim 1 which also contains a solvent selected from the group consisting of aromatic hydrocarbon solvents, ester solvents, and mixtures thereof.

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The stabilized phenolic resole resin composition of claim 2 wherein the stabilized phenolic resole resin composition comprises a polybenzylic ether phenolic resin prepared by reacting an aldehyde with a phenol such that the molar ratio of aldehyde to phenol is from 1.1:1 to 3:1 in the presence of a divalent metal catalyst.

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4. The stabilized phenolic resole resin composition of claim 3 wherein the phenol used to prepare the phenolic resole resin of the stabilized phenolic resole resin composition is selected from the group consisting of phenol, bisphenol, o-cresol, p-cresol, and mixtures thereof.

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5. The stabilized phenolic resole resin composition of claim 4 wherein the aldehyde used to prepare the phenolic resin of the stabilized phenolic resole resin composition is formaldehyde.

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24 6. The stabilized phenolic resole resin composition of claim 5 wherein the ortho ester 25 is selected from the group consisting of triethyl orthoformate, trimethyl 26 orthoformate, and mixtures thereof.

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1	7.	The stabilized phenolic resole resin composition of claim 6 wherein the amount of		
2		solvent in the resin composition is from 20 weight percent to 80 weight percent		
3		based upon the weight of the phenolic resin composition.		
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5	8.	The stabilized phenolic resole resin composition of claim 7 wherein the amount o		
6		ortho ester is from about 0.1 weight percent to about 1.5 weight percent based up		
7		the weight of the phenolic resin.		
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9	9.	The stabilized phenolic resole resin composition of claim 6 wherein the phenolic		
10		resole resin of the stabilized phenolic resole resin composition is an alkoxy-		
11		modified benzylic ether phenolic resole resin and the catalyst used to prepare said		
12		resin is a divalent zinc salt.		
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14	10.	A foundry binder system comprising the phenolic resole resin component of claim		
15		1, 2, 3, 4, 5, 6, 7, 8, or 9 and a polyisocyanate component.		
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17	11.	A foundry mix comprising:		
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19		A. a major amount of an aggregate; and		
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21		B. an effective bonding amount of the binder system of claim 10.		
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23	12.	A process for preparing a foundry shape which comprises:		
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25		(a) forming a foundry mix as set forth in claim 10;		
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27		(b) forming a foundry shape by introducing the foundry mix obtained from		
28		step (a) into a pattern;		

1		(c) conta	cting the shaped foundry binder system with a tertiary amine	
2		cataly	yst; and	
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4		(d) remo	ving the foundry shape of step (c) from the pattern.	
. 5				
• 6	12.	The process of claim 11 wherein the tertiary amine catalyst is a gaseous		
7		tertiary amine catalyst.		
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9	13.	The process of claim 12 wherein the amount of said binder composition is		
10		about 0.6 percent to about 5.0 percent based upon the weight of the aggregate.		
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12	14.	The process of claim 10 wherein the tertiary amine catalyst is a liquid tertiary		
13		amine catalyst.		
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15	15.	The process of casting a metal which comprises:		
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17		(a)	preparing a foundry shape in accordance with claim 12;	
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19		(b)	pouring said metal while in the liquid state into and a round	
20			said shape;	
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22		(c)	allowing said metal to cool and solidify; and	
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24		(d)	then senarating the molded article	